

REMARKS

The present Amendment amends claims 4, 7 and 9-11, and leaves claims 1, 3, 6, 8, 12, and 13 unchanged. Therefore, the present application has pending claims 1, 3, 4, and 6-13.

35 U.S.C. §103 Rejections

Claims 1, 3, 4, and 6-13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,006,264 to Colby, et al. ("Colby") in view of U.S. Patent No. 6,006,267 to Nguyen, et al. ("Nguyen"). This rejection is traversed for the following reasons. Applicants submit that the features of the present invention, as now more clearly recited in claims 1, 3, 4, and 6-13, are not taught or suggested by Colby or Nguyen, whether taken individually or in combination with each other in the manner suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to the claims to more clearly describe features of the present invention. Specifically, the claims were amended to more clearly recite that the present invention is directed to a video content transmitting system and method as recited, for example, in independent claims 1, 4, 7, 9, 10 and 11.

The present invention as recited in independent claim 1, and as similarly recited in independent claims 4, 7, 9, 10, and 11, provides a video content transmitting system and method, the system including a plurality of video content transmitting servers that transmit requested video contents in response to a request from video content play terminals connected to the servers via a network. The system includes a means for storing a plurality of network protocols that facilitate video content transmission between the video content transmitting servers and the

video content play terminals. The means for storing information includes a table that includes a listing of the protocols, servers, and terminals, and that correlates each of the protocols to each combination of servers and terminals (see, e.g., Fig. 4). Also, according to the present invention, each of the plurality of protocols is specified for a corresponding network route for video content transmission between each of the plurality of video content transmitting servers and each of the plurality of video content play terminals. The system also includes a means for selecting a video content transmitting server based on a determination of a protocol from the table, with respect to the video content play terminal issuing the request for video contents. The prior art does not disclose all of the above described features.

In addition to the above described features, independent claim 4 recites, and independent claims 7, 10, and 11 similarly recite, a system or method, the system further including a means for managing information of a total available bandwidth of a network route for video content transmission between each video content play terminal and each video content transmitting server, and for managing information of a bandwidth currently in use for the video content transmission. As recited in claim 4, and as similarly recited in claim 10, the means for managing information includes a table that stores information that indicates a correlation between each network route, the total available bandwidth, and the bandwidth currently in use. According to the present invention, as recited in claims 4 and 10, the table includes a listing of each network route, the total available bandwidth, and the bandwidth currently in use (see, e.g., Fig. 5). The system also includes a bandwidth calculating means for calculating a bandwidth of the network route to be used for transmission of the requested video contents and a transmission processing means. The transmission

processing means is for determining the video content transmitting server capable of transmitting the requested video contents to the requested video content play terminal, in accordance with the total available bandwidth, the current bandwidth, and the calculated bandwidth needed for video content transmission. The prior art does not disclose all of the above described features.

The above described features of the present invention, as now more clearly recited in the claims, are not taught or suggested by any of the references of record. Specifically, the features are not taught or suggested by either Colby or Nguyen, whether taken individually or in combination with each other.

Colby teaches a method and system for directing flow between a client and a server. However, there is no teaching or suggestion in Colby of the video content transmitting system and method as recited in claims 1, 4, 7, 9, 10 and 11 of the present invention.

In the Colby method and system for directing flow between a client and a server, a content-aware flow switch intercepts a client content request in an IP network, and transparently directs the content request to a best fit-server. The best-fit server is chosen based on the type of content requested, the quality of service requirements implied by the content request, the degree of load on available servers, network congestion information, and the proximity of the client to available servers.

One feature of the present invention, as recited in claim 1, and as similarly recited in claims 4, 7, 9, 10, and 11, includes a means for selecting a video content transmitting server from the plurality of video content transmitting servers based on a protocol determination of the protocols of the table in respect of the video content play terminal issuing the request to thereby determine the video content transmitting

server capable of transmitting the requested video contents to the video content play terminal requesting the video content transmission. Contrary to the Examiner's assertions, Colby does not disclose this feature. As clearly described in the Abstract of Colby, "The best-fit server is chosen based on the type of content requested, the quality of service requirements implied by the content requested, the degree of load on available servers, network congestion information, and the proximity of the client to available servers." This is quite different from the present invention, where a video content transmitting server is selected from the plurality of video content transmitting servers, based on a protocol determination of the protocols of the table in respect of the video content play terminal issuing the request. Furthermore, the Examiner concedes that Colby does not teach a table, as claimed. Therefore, it follows that Colby does not teach selecting servers based on a protocol determination of the protocols of the table. Therefore, Colby does not teach or suggest the claimed feature.

Another feature of the present invention, as recited in claim 4 and as similarly recited in claims 7, 10, and 11, includes a means for managing information relating to a total available bandwidth for video content transmission in a network route between each video content play terminal and each video content transmitting server, and for managing information relating to the bandwidth currently in use for the video content transmission. As recited in claim 4, and as similarly recited in claim 10, the managing means includes a table that stores information indicating a correlation between each network route, the total available bandwidth, and the bandwidth currently in use. According to the present invention, as recited in claim 4,

and as similarly recited in claim 10, the table includes a listing of each network route, the total available bandwidth, and the bandwidth now in use.

Regarding the means for managing information relating to a total available bandwidth feature, when networks are separate from each other and the network is branched as shown, for example, in Fig. 3 (i.e., when a communication route between a server and a terminal is not uniform), interference occurs in part of the routes between traffic of a server-terminal and traffic of another server-terminal. Accordingly, a relevant server cannot be selected by purely determining only the load states of servers, as in Colby. To overcome this problem of the prior art, the present invention provides a table, as shown in Fig. 5. The table includes information regarding a total usable bandwidth and a bandwidth currently in use, of each network route between each video content transmitting server and each video content play terminal. In the present invention, the total available bandwidth and the bandwidth currently in use for each communication route between the server and terminal are managed. As a result, a relevant server can be selected by taking into account interference due to the other server/terminal traffic or by taking into account the communication route information. Colby does not disclose the claimed feature, and as such, Colby does not teach a means for managing information, as claimed.

For example, Colby does not disclose where a total available bandwidth of a network route is managed. To support the assertion that Colby teaches means for managing information of a total available bandwidth, the Examiner cites column 15, lines 2-12, suggesting that the PortBW of Colby is equivalent to the total available bandwidth of the present invention. However, the PortBW of Colby refers to the bandwidth of a server port, which is quite different from the bandwidth of a network

route, as in the present invention. Accordingly, Colby does not teach the claimed feature.

By way of further example, Colby does not disclose where the means for managing information includes a table that includes a listing of each network route, the total available bandwidth, and the bandwidth now in use, as recited in claims and 10. As described in column 6, lines 42-44, Colby discloses where the CSD maintains several databases containing information about content flow characteristics, content locality, and the location of and the load on the servers. This information included in the databases maintained by the CSD of Colby is quite different from the bandwidth information included in the table of the present invention. More specifically, there is no disclosure of where the table of Colby includes a listing of each network route, the total available bandwidth, and the bandwidth now in use. As alleged by the Examiner in the response to arguments, the FAC of Colby uses information stored in the CSD to determine whether link bandwidth adequate to support the requested flow exists on the links between the client and each candidate server. This use of information, which is not disclosed as being the bandwidth, to determine bandwidth information, is not the same as including a listing of bandwidth information in a table, as in the present invention.

Therefore, Colby fails to teach or suggest "means for selecting a video content transmitting server from the plurality of video content transmitting servers based on a protocol determination of the protocols of the table in respect of the video content play terminal issuing the request to thereby determine the video content transmitting server capable of transmitting said requested video contents to the video

content play terminal requesting said video content transmission” as recited in claim 1, and as similarly recited in claims 4, 7, 9, 10, and 11.

Furthermore, Colby fails to teach or suggest “means for managing information of a total available bandwidth of a network route for video content transmission between each video content play terminal and each video content transmitting server, and information of a bandwidth now in use for the video content transmission, said managing means including a table storing information indicative of a correlation between each network route, the total available bandwidth, and the bandwidth now in use, wherein the table includes a listing of each network route, the total available bandwidth, and the bandwidth now in use” as recited in claim 4, and as similarly recited in claim 10.

Even further, Colby fails to teach or suggest “means for managing information of a total available bandwidth of a network route for video content transmission between each video content play terminal and each video content transmitting server, and information of a bandwidth now in use for the video content transmission” as recited in claim 7, and as similarly recited in claim 11.

The above noted deficiencies of Colby are not supplied by any of the other references of record, namely Nguyen, whether taken individually or in combination with each other. Therefore, combining the teachings of Colby and Nguyen in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Nguyen teaches a method and system for connecting network hosts having different communication protocols. However, there is no teaching or suggestion in

Nguyen of the video content transmitting system and method as recited in claims 1, 4, 7, 9, 10 and 11 of the present invention.

Nguyen discloses where a matrix is created for storing the various verified methods of communication that are available between a plurality of hosts. Each host pair has two or three values stored in the matrix to indicate the known methods of communications between each other. A first value indicates whether unreliable multicast communications are possible, not possible or not yet determined. A second value indicates whether unreliable unicast communications are possible, not possible, or not yet determined. A third optional value may indicate whether reliable unicast communications are possible, not possible, or not yet determined. The mode of communications between each pair of hosts is then selected in the order of unreliable multicast, unreliable unicast, and, finally, reliable unicast.

One feature of the present invention, as recited in claim 1, and as similarly recited in claims 4, 7, 9, 10, and 11, includes a means for selecting a video content transmitting server from the plurality of video content transmitting servers based on a protocol determination of the protocols of the table in respect of the video content play terminal issuing the request to thereby determine the video content transmitting server capable of transmitting the requested video contents to the video content play terminal requesting the video content transmission. Nguyen does not disclose this feature, and the Examiner does not rely upon Nguyen for teaching this feature.

Another feature of the present invention, as recited in claim 4 and as similarly recited in claims 7, 10, and 11, includes a means for managing information relating to a total available bandwidth for video content transmission in a network route between each video content play terminal and each video content transmitting

server, and for managing information relating to the bandwidth currently in use for the video content transmission. As recited in claim 4, and as similarly recited in claim 10, the managing means includes a table that stores information indicating a correlation between each network route, the total available bandwidth, and the bandwidth currently in use. According to the present invention, as recited in claim 4, and as similarly recited in claim 10, the table includes a listing of each network route, the total available bandwidth, and the bandwidth now in use. Nguyen does not disclose this feature, and the Examiner does not rely upon Nguyen for teaching a means for managing information of a total available bandwidth.

Therefore, Nguyen fails to teach or suggest "means for selecting a video content transmitting server from the plurality of video content transmitting servers based on a protocol determination of the protocols of the table in respect of the video content play terminal issuing the request to thereby determine the video content transmitting server capable of transmitting said requested video contents to the video content play terminal requesting said video content transmission" as recited in claim 1, and as similarly recited in claims 4, 7, 9, 10, and 11.

Furthermore, Nguyen fails to teach or suggest "means for managing information of a total available bandwidth of a network route for video content transmission between each video content play terminal and each video content transmitting server, and information of a bandwidth now in use for the video content transmission, said managing means including a table storing information indicative of a correlation between each network route, the total available bandwidth, and the bandwidth now in use, wherein the table includes a listing of each network route, the

total available bandwidth, and the bandwidth now in use" as recited in claim 4, and as similarly recited in claim 10.

Even further, Nguyen fails to teach or suggest "means for managing information of a total available bandwidth of a network route for video content transmission between each video content play terminal and each video content transmitting server, and information of a bandwidth now in use for the video content transmission" as recited in claim 7, and as similarly recited in claim 11.

Both Colby and Nguyen suffer from the same deficiencies, relative to the features of the present invention, as recited in the claims. Therefore, combining the teachings of Colby and Nguyen in the manner suggested by the Examiner does not render obvious the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection of claims 1, 3, 4, and 6-13 as being unpatentable over Colby in view of Nguyen are respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 1, 3, 4 and 6-13.

In view of the foregoing amendments and remarks, Applicants submit that claims 1, 3, 4 and 6-13 are in condition for allowance. Accordingly, early allowance of claims 1, 3, 4 and 6-13 is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger & Malur, P.C., Deposit Account No. 50-1417 (referencing attorney docket no. 500.39531X00).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

A handwritten signature in cursive script, reading "Donna K. Mason", is written over a horizontal line.

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